

REMARKS

Reconsideration of the Office Action of January 30, 2006 is respectfully requested. Enclosed herewith is a three-month Petition for Extension of Time with Small Entity Fee, taking the response period up to July 31, 2006.

In the Office Action the specification was objected to as being considered to not provide antecedent support for the following phases:

- a) insert head
- b) positioning members
- c) pair of shoes

As to each of a, b, and c reference is made to the paragraph bridging pages 173 and 174. As set forth therein “head CH” is “received” within the central reception cavity CS and thus “insert head” is considered fully supported. To facilitate referencing, the pertinent sentence has been amended by including “insert” before “head”. This paragraph also references shoes SH1 and SH2 which is submitted to be sufficient support for a “pair of shoes”. Also, these shoes are described as used to secure in position head CH. The specification revisions include an indication that this position is achieved by positioning members; the shoes of which are representative. See also the first embodiment positioning of the plug head. Accordingly, it is respectfully submitted that the original disclosure provided sufficient antecedent support, wherein this support becomes more apparent with the present specification amendments.

The Office Action includes a rejection of claims 2-6 and 9-15 under 35 U.S.C. §112. A review of the claim amendments reveals that each of the issues raised relative to lack of antecedent basis has been addressed in the current claims set and thus withdrawal of the rejection is respectfully requested. It is also respectfully submitted that the antecedent revisions are, recognizable “objectionable” type revisions rather than revisions reaching the criteria of being indefinite under 35

USC § 112, 2nd paragraph. Claim 1 has also been amended to reference an edge seal heater element with support being found, for example, on page 13 of the present application.

Applicants acknowledge with appreciation the Examiner confirmation of dependent claims 6, 9, 10, 11 and 13 containment of allowable subject matter. In the present amendment new independent claim 32 represents objected to claim 6 rewritten in independent fashion while claim 33 represents claim 13 rewritten in independent fashion with a modification of shoes to positioners for greater consistency.

The Office Action includes the following prior art claim rejections which are each addressed below:

<i>IDENTIFICATION/ CLAIM NOS.</i>		<i>STATUTORY GROUNDS</i>	<i>REFERENCE(S)</i>
<i>A</i>	<i>1-3, 7, 9, 12 and 16-18 (with claims 1 and 16 being independent claims)</i>	<i>35 U.S.C. 102(b)</i>	<i>Sperry 6,598,373</i>
<i>B</i>	<i>19 (independent)</i>	<i>35 U.S.C. 102(b)</i>	<i>Salerno 5,942,076</i>
<i>C</i>	<i>4, 5 and 16-18 (claim 16 independent)</i>	<i>35 U.S.C 103</i>	<i>Sperry 6,598,373</i>
<i>D</i>	<i>14</i>	<i>35 U.S.C 103</i>	<i>Sperry 6,598,373 in view of Gianelli (GB 2 291 620)</i>
<i>E</i>	<i>15 (independent)</i>	<i>35 U.S.C 103</i>	<i>Gianelli (GB 2 291 620)</i>

The Office Action includes a rejection of claims 1-3, 7, 9, 12 and 16-18 as being anticipated by Sperry, et al. '373. In this rejection there is an indication that the "edge wire support (52) retains an edge seal position while the driving member (96) rotates within the sleeve". The Office Action also references "the sleeve" to be represented by member 62 in Sperry. This assertion is respectfully traversed as the driving member (96) does not rotate within bearing sleeve 62 as is expected in view

of its film draw function. In this regard, reference is made to column 13, lines 36 to 46 of Sperry '373, which describes the motor 96 as being "axially coupled" to cylinder 62. The very purpose of the arrangement of motor 96 is to drive cylinder 67 and thus it does not rotate within cylinder 62. Claim 1 currently references the claimed arrangement as being one where the drive member rotates within and relative to said bearing sleeve. This claim revision thus brings the same point across as the original language to the driving member being arranged relative to the bearing sleeve such that it is free to rotate within the sleeve and thus facilitates position maintenance.

Accordingly, it is respectfully submitted that Claim 1 and the dependents 2, 3, 7, 9, and 12 represent patentable subject matter relative to Sperry '373.

In the rejection of claim 16 there is indicated:

"While Sperry, et al. does not disclose whether the sleeve (62) supports a roller bearing, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the sleeve (62) to the rotating drive means (96) via a roller bearing since Examiner takes Official Notice mounting rollers with roller bearing is well known in the art for the purpose of controlling the rotation of the roller about a drive means."

This rejection and Official Notice is traversed relative to the arrangement set out in Sperry. That is, as described above, Sperry describes an axial drive coupling arrangement between the drive shaft of motor 96 and roller 62 (or vice versa or both). For such a driver/driven arrangement where there is a desire for film traction, it is respectfully submitted that one of ordinary skill in the art would use a direct drive non-slippage drive coupling between the driven and driver support shafts. There is lacking anything in the disclosed reference that would suggest the use of the more expensive and more complex arrangement that would be required with a roller bearing like that set out in the present Claim 16. That is, one of ordinary skill in the art would recognize a roller bearing arrangement as not providing benefits relative to the film draw with roller arrangement described in Sperry '373. If a different conclusion is reached by the Examiner, Applicant respectfully requests that, in accordance with MPEP 2144, a showing to support the Official Notice be provided as relative to the environment/usage associated with Sperry '373.

New dependent claims 34 and 35 even further distinguish the claimed present invention relative to Sperry with the inclusion of added features relative to the nip roller arrangement of the present invention. Claim 36, describes the sealing section of the heater element/the insert heater/housing (with the housing received by the bearing support), which combination is not disclosed or suggested by Sperry '373.

Claim 19 was rejected as being considered anticipated by Salerno, et al. US Patent No. 5,942,076. A review of the features of claim 19 reveals a control system having "means for comparing resistance levels at a current temperature and comparing with a [TCR] value reference".

This means is not disclosed or suggested in the general discussion of taking TCR attributes for calibration purposes in Column 5, lines 25 to 38 of Sperry '373.

For example, a review of the present invention's disclosure reveals the discussion of an embodiment where the resistance level is determined on a real time basis by establishing current values relative to a precise resistance value (as in a fine wire sub-assembly that allows for higher precision a measurement). This information thus provides suitable information in delivering the current or real resistance value of the heater wire and, with such information, the "current" or present temperature can be readily determined and any desired fine tune adjustment can be made. It is further noted in the discussion of the present application the benefits of using very low resistance conductor plugs in the circuit containing the heater element. This is a further example of current resistance determination at a current temperature of the heater element. In other words, since the resistance is essentially attributable to the heater wire and not to a combination of the heater wire and other substantive resistance members in the circuitry, there is provided the ability to monitor current temperature. This means for comparing resistance values using known TCR characteristics for determination of current temperature values is not disclosed or suggested in Sperry.

Independent claim 15 stands rejected as obvious under Gianelli which is described as disclosing knowledge of a relationship between heat sealing with bars or wires and the relationship of TCR values, with reference being made to page 9 lines 1-17 and page 10 lines 23-39) and with that relationship said to describe the notion of wires formed from materials have a lower TCR

values requiring less time to adjust in temperature. Based on this disclosure it is further set forth that

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“It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a material having Applicants TCR value, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.”

This rejection of claim 15 as being obvious is respectfully traversed. Gianelli describes a system wherein a high impulse is provided to heat a wire between the points of seal heat Ts and a degradation temperature for the material being sealed. This relationship is described as avoiding the difficulty faced in the prior art of providing sufficient heat energy to provide a good seal bond while avoiding too much energy that can lead to a defective seal bond. This two stage pulsing described in Gianelli is described as a way to facilitate avoidance of that difficulty in the prior art. More specifically, Gianelli describes its first heating cycle consisting of a first high power impulse in which the temperature of the sealing ribbon 5 or wire is rapidly raised by an electrical impulse to a temperature at least equal to the sealing temperature of the thermoplastic film plies to be sealed (or the highest sealing temperature where several different materials are to be sealed) but yet below the degradation temperature of the film. This is said to ensure that sealing will occur at a temperature which is achieved very rapidly and which will not prejudice the integrity of the film being sealed. For attainment of this initial high temperature there is a first heating impulse at a relatively high power level as compared with a second impulse or phase to follow, and during the first impulse the heating from the heat sealing bar is able to penetrate rapidly through the build-up of thermoplastic plies to be sealed, but because of the relatively high power level involved this first impulse is described as being short lived to guard against overheating of the clamped films.

In Gianelli a second, lower power level, electric impulse is applied to the heat sealing ribbon or wire to maintain the temperature of the heating element at least equal to the sealing temperature of the films, and during this "dwell" period the application of heat to the plastic film plies continues but at a level which is sufficiently low as to be well clear of the degradation point of the films.

Nevertheless during this second impulse heat is able to penetrate still further into the build-up in order to ensure that at every interface the temperature has achieved at least the sealing temperature of the films plies, in order to build a good bond at the interfaces.

In Gianelli there is described a general range of at least 200×10^{-6} with an indication of alloys having 4500×10^{-6} being a much more preferred value on the basis that this high TCR value provides a rapid reduction in current from peak value x to a value at time t_1 at the end of the first heating element. This suggestion of a desire for such a high TCR value teaches away from the presently claimed invention's range of “.00015 to .0035 ohm/ohm/degree Celsius at 20 degrees Celsius resistivity for a 0 to 100 degrees Celsius and an ohm/CMF from 350 or more, and with a temperature coefficient of resistance value which increases by at least .008 ohm per 10 degree rise in temperature between 350 to 425 °F”. That is, in Gianelli's providing of a brief high energy pulse followed by a lower energy setting, there is not the concern outlined in the present application on pages 163 and 164 regarding the problems of having too high a TCR value jump per increase in energy and the potential for burn out due to hot spot avalanching; while still providing a sufficient resistance differential relative to temperature increase to accommodate accurate resistance variation monitoring for temperature calculation. The presently claimed 15 sets forth these structural differences, not recognized in Gianelli. Nor is the parameters set out in Claim 15 a matter of optimization in Gianelli in view of the alternate set up in Gianelli with its different level energy pulsing within specific time frames.

The dependent claim 37 includes additional factors of a preferred means for resistance comparisons and the use of TCR wires having characteristics to help simplify the comparison.

New independent claim 38 presents features that are considered similar in many respects to the allowable subject matter of Claim 13, with dependent claims 39 to end presenting additional distinguishing features. All claim amendments are respectfully submitted to be supported by the original application (e.g., see the groove insert head shown in Figures 173C and 173D).

In view of the foregoing, it is respectfully submitted that the application stands in condition for allowance. If for any reason, however, it is deemed that the present application is not in

condition for immediate allowance, the Examiner is invited to telephone the undersigned to further discuss the case.

Also, if any fees are due in connection with the filing of this Amendment, such as fees under 37 C.F.R. §1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 034017.011.

Respectfully submitted,

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